Sprint Nextel

Sprint®

Together with NEXTEL

Wireless Enhanced 911 – An Overview

A Discussion of the Capabilities and Limitations of Wireless E911 Accuracy

November 14, 2007

Agenda

- A discussion of current deployed technology
- Overview of current accuracy performance
- Assessment of alternative technologies

Simplified Phase II Architecture Assisted GPS Handset System

LEC
Selective
Router

MPC/
PDE

National
ALI

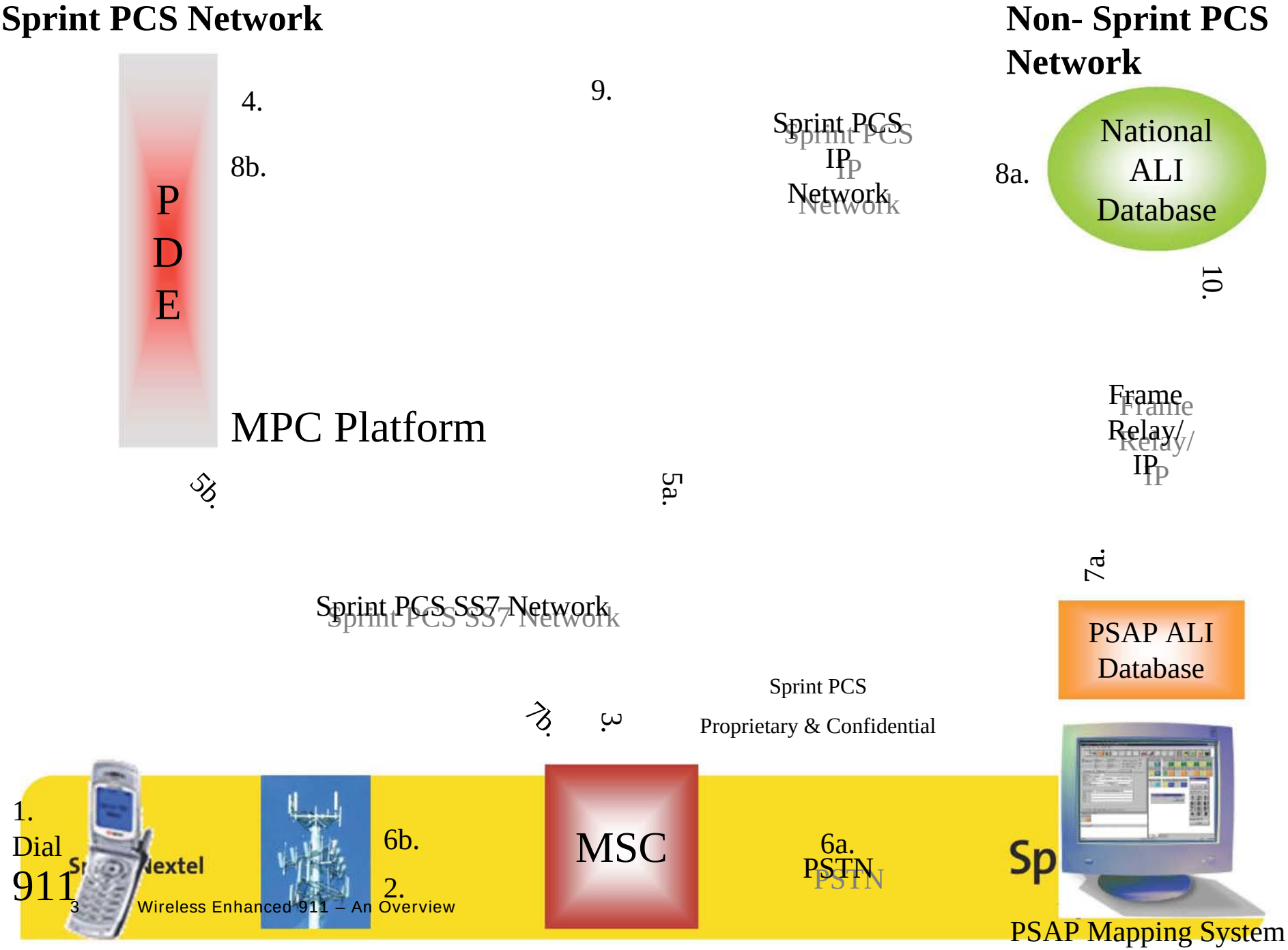
Regional
ALI

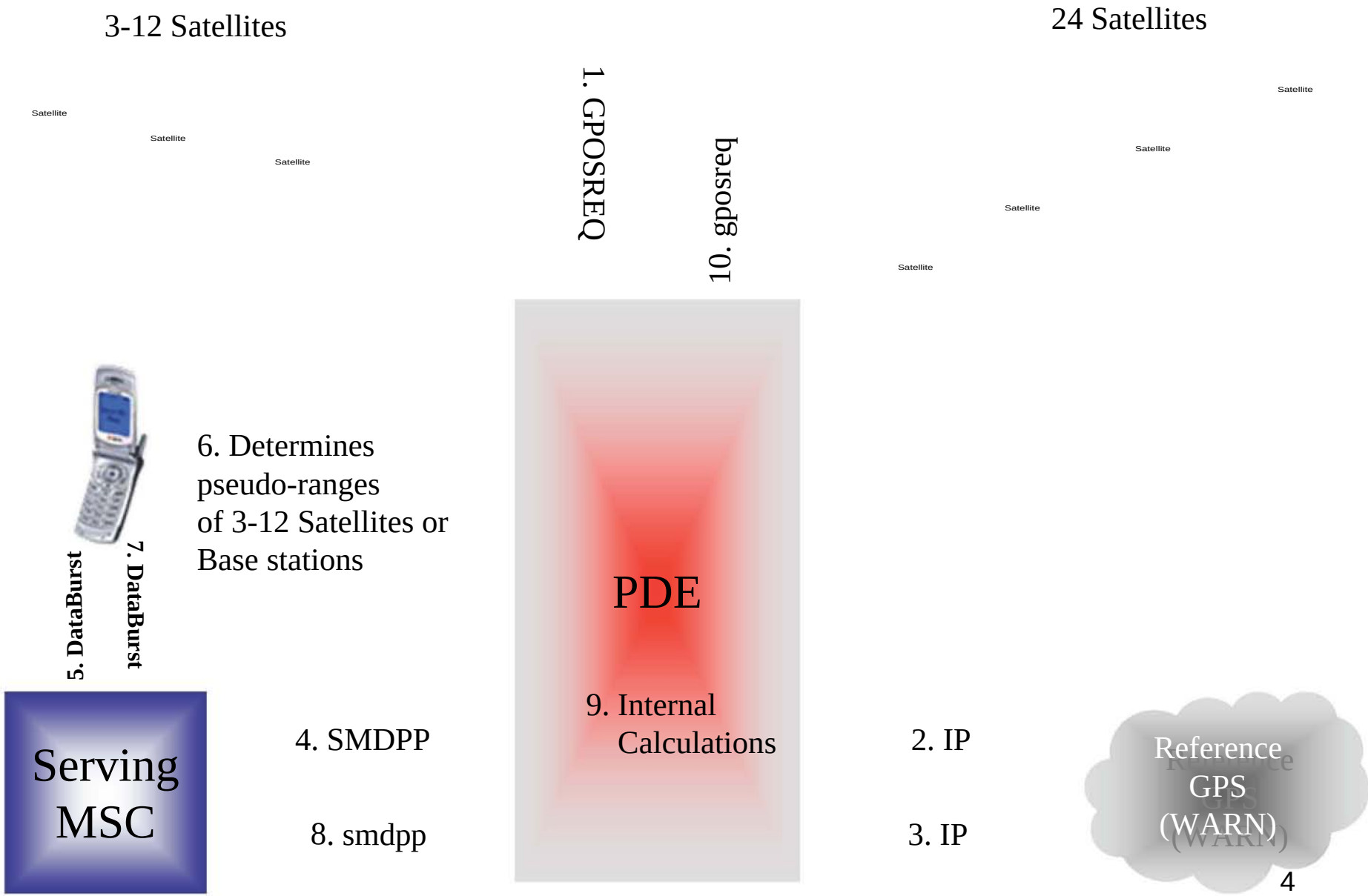
Satellite

WARN
Network

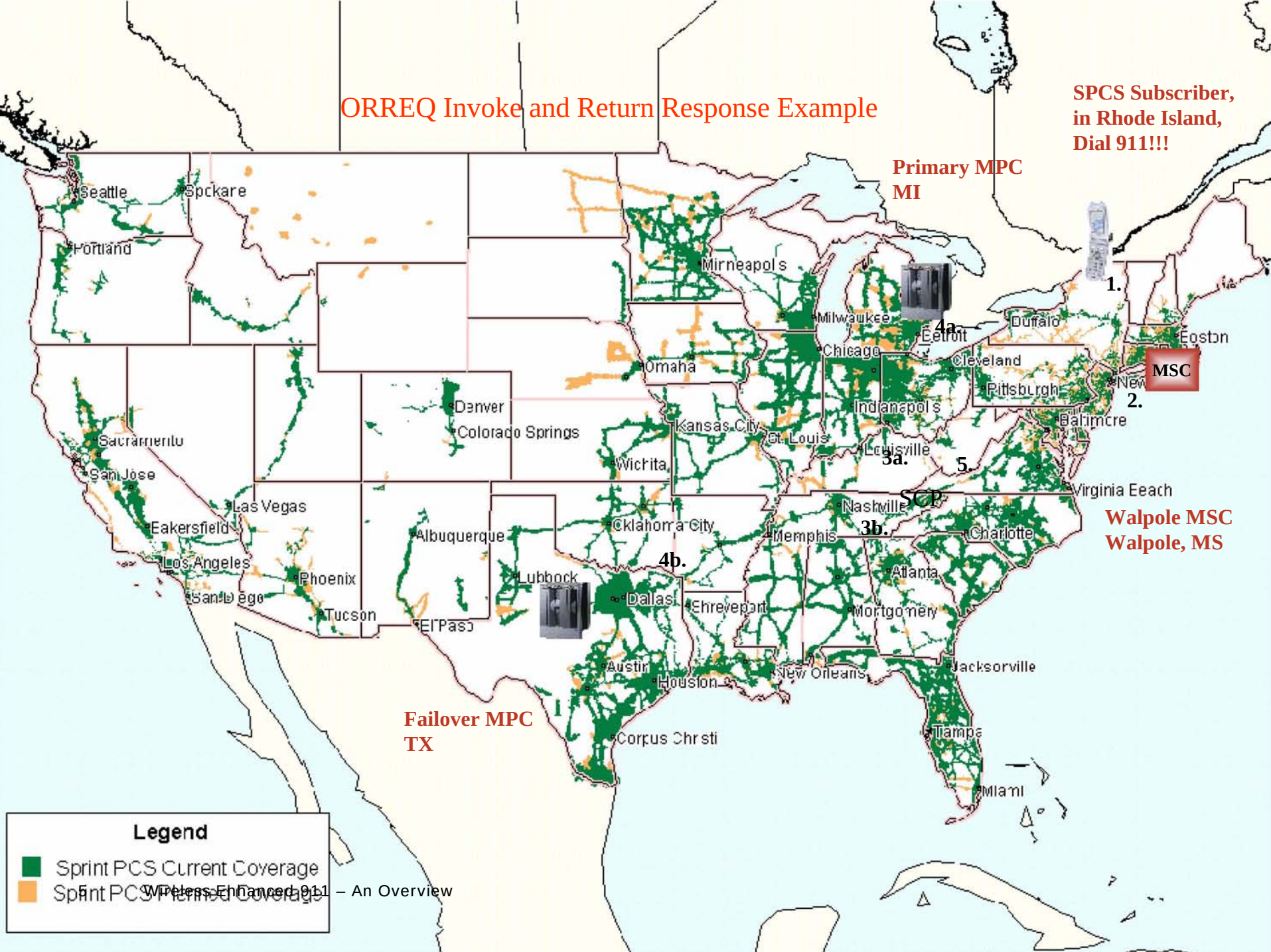
Satellite

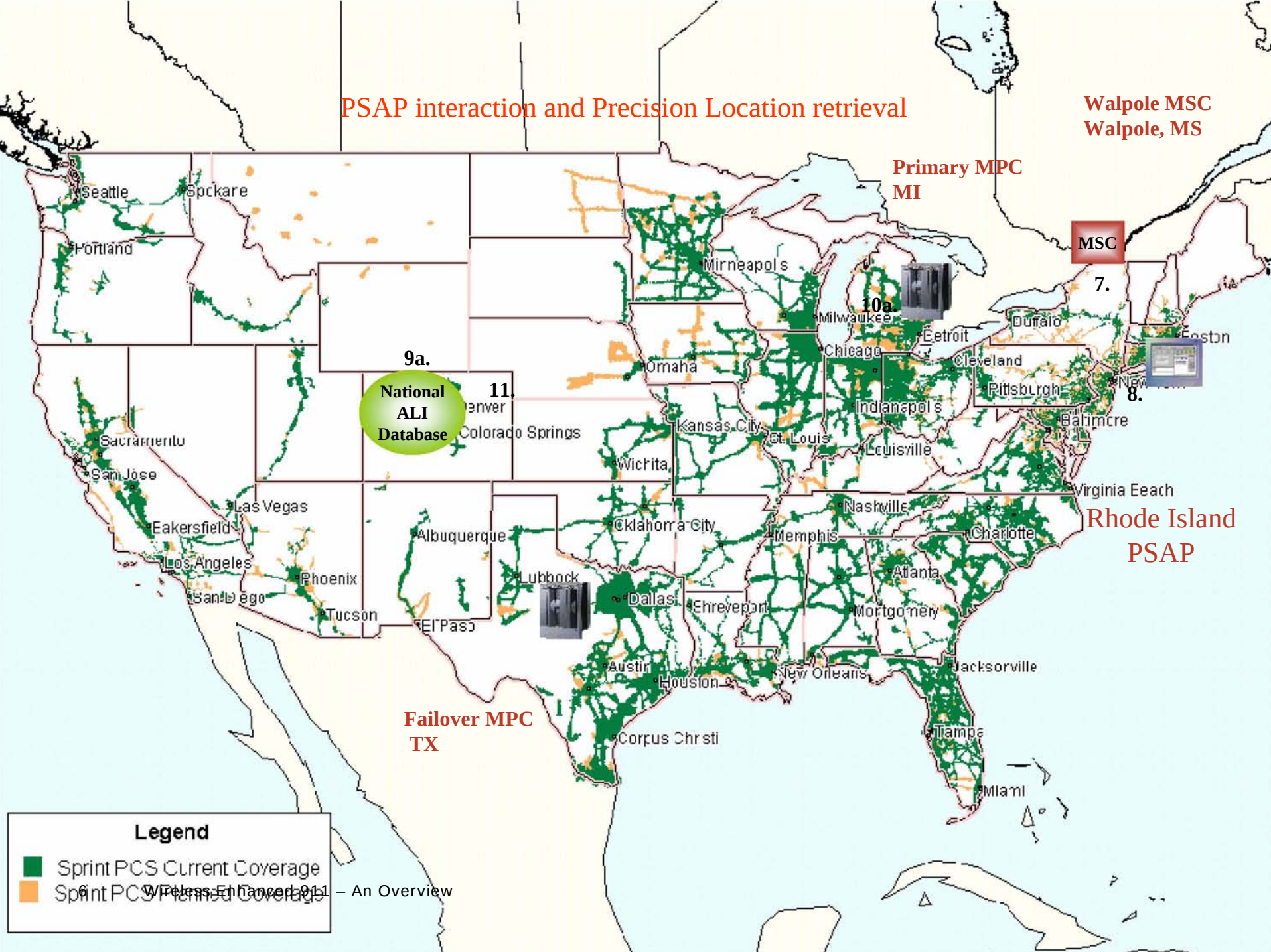
Satellite


Sprint PCS Network
Non- Sprint PCS Network
National ALI Database
Sprint PCS IP Network
PDE
MPC Platform
Frame Relay/ IP
Sprint PCS SS7 Network
PSAP ALI Database
Sprint PCS
Proprietary & Confidential
MSC
PSTN
PSAP Mapping System
1. Dial 911
2.
3.
4.
5a.
5b.
6a.
6b.
7a.
7b.
8a.
8b.
9.
10.


3-12 Satellites
24 Satellites
Satellite
Satellite
Satellite
Satellite
Satellite
Satellite
1. GPOSREQ
10. gposreq
6. Determines
pseudo-ranges
of 3-12 Satellites or
Base stations
5. DataBurst
7. DataBurst
PDE
9. Internal
Calculations
Serving
MSC
4. SMDPP
8. smdpp
2. IP
3. IP
Reference
GPS
(WARN)

ORREQ Invoke and Return Response Example




PSAP interaction and Precision Location retrieval
Walpole MSC
Walpole, MS
Primary MPC
MI
MSC
7.
10a.
9a.
National
ALI
Database
11.
8.
Failover MPC
TX
Rhode Island
PSAP
Seattle
Spokane
Portland
Minneapolis
Milwaukee
Detroit
Buffalo
Boston
Chicago
Cleveland
Omaha
Pittsburgh
Indianapolis
Baltimore
Kansas City
St. Louis
Louisville
Wichita
Sacramento
San Jose
Virginia Beach
Las Vegas
Nashville
Bakersfield
Oklahoma City
Memphis
Charlotte
Albuquerque
Los Angeles
Phoenix
Atlanta
Lubbock
San Diego
Dallas
Shreveport
Tucson
El Paso
Montgomery
Austin
Houston
New Orleans
Jacksonville
Corpus Christi
Tampa
Miami
Legend
Sprint PCS Current Coverage
Sprint PCS Planned Coverage

Current Accuracy

> Project Locate testing errors and actual results

> Sprint testing operations

- Current systems provide very accurate information on the vast majority of calls regardless of topology or size of the PSAP

Alternative Technologies

> Almost all are based upon the same technology used today:
- AGPS
- Network Triangulation

> Any solution which requires handset replacement is unrealistic
- Current penetration rate/no growth
- Churn assumptions
- Number of models to be replaced
- 200 million handsets/10 years

> Network solutions involve similar issues
- 200,000 cell sites

> No proposed solution resolves rural indoor coverage

> Role of the individual carrier in future deployment